

REMARKS

In the last Office Action, the Examiner rejected claims 1 and 6 under 35 U.S.C. §102(b) as being anticipated by U.S. Patent No. 6,031,553 to Nagamoto et al. ("Nagamoto"). Claims 2 and 3 were rejected under 35 U.S.C. §103(a) as being unpatentable over Nagamoto in view of U.S. Patent Application Publication No. US2003/0160850 to Ohya et al. ("Ohya"). Claim 4 was rejected under 35 U.S.C. §103(a) as being unpatentable over Nagamoto in view of U.S. Patent Application Publication No. US2003/0068571 to Uehara et al. ("Uehara"). Claim 5 was rejected under 35 U.S.C. §103 as being unpatentable over Nagamoto in view of U.S. Patent No. 4,745,431 to Kogure et al. ("Kogure"). Additional art was cited of interest.

In accordance with the present response, the specification has been suitably revised to correct informalities, provide antecedent basis for the claim language, and bring it into better conformance with U.S. practice. Original independent claim 1 has been amended to further patentably distinguish from the prior art of record. Original claims 1-6 have also been amended in formal respects to improve wording and bring them into better conformance with U.S. practice. New claims 7-20 have been added to provide a fuller scope of coverage. The title of the invention has been changed to "PRINTER APPARATUS FOR THERMOSENSITIVE ADHESIVE SHEET" to more clearly reflect the invention to which the

amended and new claims are directed. A new, more descriptive abstract has been substituted for the abstract of record.

Applicants respectfully request reconsideration of their application in light of the following discussion.

Brief Summary of the Invention

The present invention is directed to a printer apparatus for printing on a thermosensitive adhesive sheet.

Figs. 6 shows a conventional printing apparatus 100 for printing on a thermosensitive adhesive label L. The printing apparatus has a printing unit 110 by which printing is carried out on the thermosensitive adhesive label L, a cutter unit 120 for cutting the thermosensitive adhesive label L after the printing operation, and a thermally activating unit 130 for thermally activating the thermosensitive adhesive label L after the printing and cutting operations.

However, a problem with the conventional printing unit 100 is that a large space is required to accommodate both the thermally activating unit 130 and the printing unit 110 which are completely independent from one another. Additionally, since thermal activation of the thermosensitive adhesive label L by the thermally activating unit 130 is conducted after the printing operation by the printing unit 110 (i.e., the thermal activation and the printing operation are conducted during separate and independent processing

steps), the conventional printing unit 100 requires a long period of time for conducting the printing and thermal activation operations.

The present invention overcomes the drawbacks of the conventional art. Figs. 1-5 show an embodiment of a printer apparatus P according to the present invention embodied in the claims. The printer apparatus P has printing means (e.g., thermal head 10 and heat radiating plate 12) for printing on a printable layer (i.e., the layer facing the thermal head 10) of a thermosensitive adhesive sheet L having a thermosensitive adhesive layer disposed opposite to the printable layer. A heat-application and transporting member 11 heats the thermosensitive adhesive layer of the thermosensitive adhesive sheet L and transports the thermosensitive adhesive sheet L. A control apparatus (e.g., CPU 71) controls the heat-application and transporting member 11 to heat a portion of the thermosensitive adhesive layer of the thermosensitive adhesive sheet L and to transport the thermosensitive adhesive sheet L while simultaneously controlling the printing means to print on a portion of the printable layer of the thermosensitive adhesive sheet L disposed opposite to and generally confronting the portion of the thermosensitive adhesive layer of the thermosensitive adhesive sheet L.

By the foregoing construction, the printer apparatus according to the present invention is more compact than the

conventional apparatus of the type shown in Fig. 6 because it does not require a thermally activating unit separate and independent from the printing unit for thermally activating the thermosensitive adhesive sheet. Furthermore, by the printer apparatus of the present invention, the thermosensitive adhesive layer of the thermosensitive adhesive sheet L can be heated while simultaneously printing on the printable layer of the thermosensitive adhesive sheet L, thereby substantially shortening the time for performing the printing and thermally activation operations as compared to the conventional art.

Traversal of Prior Art Rejections

Rejection Under 35 U.S.C. §102(b)

Claims 1 and 6 were rejected under 35 U.S.C. §102(b) as being anticipated by Nagamoto. Applicants respectfully traverse this rejection and submit that amended claims 1 and 6 recite subject matter which is not identically disclosed or described in Nagamoto.

Amended independent claim 1 is directed to a printer apparatus and requires printing means for printing on a printable layer of a thermosensitive adhesive sheet having a thermosensitive adhesive layer disposed opposite to the printable layer, heat-application and transporting means for heating the thermosensitive adhesive layer of the

thermosensitive adhesive sheet and for transporting the thermosensitive adhesive sheet, and control means for controlling the heat-application and transporting means to heat a portion of the thermosensitive adhesive layer of the thermosensitive adhesive sheet and to transport the thermosensitive adhesive sheet while simultaneously controlling the printing means to print on a portion of the printable layer of the thermosensitive adhesive sheet disposed opposite to and generally confronting the portion of the thermosensitive adhesive layer of the thermosensitive adhesive sheet. No corresponding structural and functional combination is disclosed or suggested by the prior art of record.

Nagamoto discloses a printer apparatus for printing on and activating a thermosensitive adhesive label (Fig. 1). The printer apparatus has a printer 8 for printing images on a thermosensitive adhesive label 2, a cutter 9 for cutting the thermosensitive adhesive label 2, and a heat activator 10 for heat-activating a thermosensitive adhesive layer 5 of the thermosensitive adhesive label 2. However, Nagamoto fails to disclose or describe the specific structural and functional combination of the printer apparatus recited in amended independent claim 1 as set forth below.

Amended independent claim 1 requires "heat-application and transporting means for heating the thermosensitive adhesive layer of the thermosensitive adhesive

sheet while transporting the thermosensitive adhesive sheet." Under the guidelines set forth by the Court of Appeals for the Federal Circuit, means-plus-function language in a claim must be construed to cover the structure described in the specification, and equivalents thereof, to the extent that the specification provides such disclosure. In re Donaldson Co., Inc., 29 USPQ2d 1845, 1849 (Fed. Cir. 1994). When amended claim 1 is construed in this manner, the "heat-application and transporting means" requires, for example, a metal shaft or platen roller having a hollow portion and a heating element disposed in the hollow portion for heating the metal shaft or platen roller. As recognized by the Examiner, Nagamoto does not disclose or describe such structure, or equivalents thereof.

Moreover, unless the components of the printer apparatus disclosed by Nagamoto perform the identical functions specified in the means-plus-function limitation of claim 1, the components cannot be an equivalent for the purposes of Section 112, 6th paragraph. Pennwalt Corp. v. Durand-Wayland, Inc., 4 USPQ2d 1737 (Fed. Cir. 1987). In this regard, amended claim 1 requires control means having the specific functions of controlling the heat-application and transporting means to heat a portion of the thermosensitive adhesive layer of the thermosensitive adhesive sheet while simultaneously controlling the printing means to print on a

portion of the printable layer of the thermosensitive adhesive sheet disposed opposite to and generally confronting the portion of the thermosensitive adhesive layer of the thermosensitive adhesive sheet. Stated otherwise, in amended claim 1 the printing and heating of corresponding opposite and confronting portions of the thermosensitive adhesive sheet are conducted simultaneously (i.e., at the same time). In contrast, in Nagamoto printing on a printable portion of the label 2 is conducted by the printer 8 in one operation and activation (i.e., heating) of a portion of the thermosensitive adhesive layer of the label 2 is conducted by the heat activator 10 in a subsequent operation (i.e., the two operations are not conducted simultaneously, but rather during different periods of time).

In summary, since Nagamoto does not disclose or describe the structure, or equivalents thereof, corresponding to the "heat-application and transporting means" recited in amended claim 1, and since the components of the printer apparatus disclosed by Nagamoto do not perform the identical functions of the control means specified in amended claim 1, the reference does not anticipate the printer apparatus recited in amended claim 1.

In the absence of the foregoing disclosure recited in independent claim 1, anticipation cannot be found. See, e.g., W.L. Gore & Associates v. Garlock, Inc., 220 USPQ 303,

313 (Fed. Cir. 1983), cert. denied, 469 U.S. 851 (1984) ("Anticipation requires the disclosure in a single prior art reference of each element of the claim under consideration"); Continental Can Co. USA v. Monsanto Co., 20 USPQ2d 1746, 1748 (Fed. Cir. 1991) ("When more than one reference is required to establish unpatentability of the claimed invention anticipation under § 102 can not be found."); Lindemann Maschinenfabrik GmbH v. American Hoist & Derrick Co., 221 USPQ 481, 485 (Fed. Cir. 1984) (emphasis added) ("Anticipation requires the presence in a single prior art reference disclosure of each and every element of the claimed invention, arranged as in the claim").

Stated otherwise, there must be no difference between the claimed invention and the reference disclosure, as viewed by a person of ordinary skill in the field of the invention. This standard is clearly not satisfied by Nagamoto for the reasons stated above. Furthermore, Nagamoto does not suggest the claimed subject matter and, therefore, would not have motivated one skilled in the art to modify Nagamoto's printer apparatus to arrive at the claimed invention.

Claim 6 depends on and contains all of the limitations of amended independent claim 1 and, therefore, distinguishes from the reference at least in the same manner as claim 1.

In view of the foregoing, applicants respectfully request that the rejection of claims 1 and 6 under 35 U.S.C. §102(b) as being anticipated by Nagamoto be withdrawn.

Rejections Under 35 U.S.C. §103(a)

Claims 2-3 were rejected under 35 U.S.C. §103(a) as being unpatentable over Nagamoto in view of Ohya. Applicants respectfully traverse this rejection and submit that the combined teachings of Nagamoto and Ohya do not disclose or suggest the subject matter recited in amended claims 2-3.

Nagamoto does not disclose or suggest the subject matter recited in amended independent claim 1 as set forth above for the rejection of claims 1 and 6 under 35 U.S.C. §102(b). Claims 2-3 depend on and contain all of the limitations of amended independent claim 1 and, therefore, distinguish from the reference at least in the same manner as claim 1.

The secondary reference to Ohya discloses an ink-jet forming method which includes a heat and pressure process during which a recording medium is passed between a heating roll and a pressure roll. A halogen lamp heater is disposed in a hollow portion of the heating roll.

However, Ohya clearly does not disclose the control means and corresponding functions recited in amended independent claim 1. For example, Ohya does not disclose or

suggest the specific functions of controlling the heat-application and transporting means to heat a portion of the thermosensitive adhesive layer of the thermosensitive adhesive sheet while simultaneously controlling the printing means to print on a portion of the printable layer of the thermosensitive adhesive sheet disposed opposite to and generally confronting the portion of the thermosensitive adhesive layer of the thermosensitive adhesive sheet, as recited in amended independent claim 1. Since Ohya does not disclose or suggest the specific functions of the control means recited in amended claim 1, from which claims 2-3 depend, it does not cure the deficiencies of Nagamoto. Accordingly, one ordinarily skilled in the art would not have been led to modify the references to attain the claimed subject matter.

In view of the foregoing, applicants respectfully request that the rejection of claims 2-3 under 35 U.S.C. §103(a) as being unpatentable over Nagamoto in view of Ohya be withdrawn.

Claim 4 was rejected under 35 U.S.C. §103(a) as being unpatentable over Nagamoto in view of Uehara. Applicants respectfully traverse this rejection and submit that the combined teachings of Nagamoto and Uehara do not disclose or suggest the subject matter recited in amended claim 4.

Nagamoto does not disclose or suggest the subject matter recited in amended independent claim 1 as set forth above for the rejection of claims 1 and 6 under 35 U.S.C. §102(b). Claim 4 depends on and contains all of the limitations of amended independent claim 1 and, therefore, distinguishes from the reference at least in the same manner as claim 1.

The secondary reference to Uehara discloses a printer apparatus for forming an image. The Examiner cited Uehara for its disclosure of a temperature measuring sensor for measuring the surface temperature of a heating roller. However, Uehara does not disclose or suggest the structure, or equivalents thereof, corresponding to the "heat-application and transporting means" recited in claim 1. Furthermore, the components of the printer apparatus disclosed by Uehara do not perform the identical functions specified in the means-plus-function limitations of claim 1. Since Uehara does not disclose or suggest these structural and functional features recited in amended claim 1, from which claim 4 depends, it does not cure the deficiencies of Nagamoto. Accordingly, one ordinarily skilled in the art would not have been led to modify the references to attain the claimed subject matter.

In view of the foregoing, applicants respectfully request that the rejection of claim 4 under 35 U.S.C. §103(a)

as being unpatentable over Nagamoto in view of Uehara be withdrawn.

Claim 5 was rejected under 35 U.S.C. §103(a) as being unpatentable over Nagamoto in view of Kogure. Applicants respectfully traverse this rejection and submit that the combined teachings of Nagamoto and Kogure do not disclose or suggest the subject matter recited in amended claim 5.

Nagamoto does not disclose or suggest the subject matter recited in amended independent claim 1 as set forth above for the rejection of claims 1 and 6 under 35 U.S.C. §102(b). Claim 5 depends on and contains all of the limitations of amended independent claim 1 and, therefore, distinguishes from the reference at least in the same manner as claim 1.

The secondary reference to Kogure discloses a fixing device for an image forming apparatus. The Examiner cited Kogure for its disclosure of a heating roller connected to a main body frame via an insulating member. However, Kogure does not disclose or suggest the structure, or equivalents thereof, corresponding to the "heat-application and transporting means" recited in claim 1. Furthermore, the components of the printer apparatus disclosed by Uehara do not perform the identical functions specified in the means-plus-function limitations of claim 1. Since Kogure does not

disclose or suggest these structural and functional features recited in amended claim 1, from which claim 4 depends, it does not cure the deficiencies of Nagamoto. Accordingly, one ordinarily skilled in the art would not have been led to modify the references to attain the claimed subject matter.

In view of the foregoing, applicants respectfully request that the rejection of claim 5 under 35 U.S.C. §103(a) as being unpatentable over Nagamoto in view of Kogure be withdrawn.

Applicants respectfully submit that new claims 7-20 also patentably distinguish from the prior art of record. Claims 7-9 depend on and contain all of the limitations of amended independent claim 1 and, therefore, distinguish from the prior art of record at least in the same manner as claim 1.

Moreover, there are separate grounds for patentability of new dependent claims 7-9 which are directed to the specific structure of the heat-application and transporting means and its structural and functional relation to the printing means. No corresponding features are disclosed or suggested by the prior art of record.

New independent claim 10 is directed to a printer apparatus and requires a heat-application and transporting member for heating a thermosensitive adhesive layer disposed on a first surface of a thermosensitive adhesive sheet and for

transporting the thermosensitive adhesive sheet, printing means for printing on a second surface of the thermosensitive adhesive sheet disposed opposite the first surface thereof while the thermosensitive adhesive layer of the thermosensitive adhesive sheet is simultaneously heated by the heat-application and transporting member, and pressure-application means for bringing the printing means into pressure contact with the heat-application and transporting member with the thermosensitive adhesive sheet disposed therebetween. No corresponding structural combination is disclosed or suggested by the prior art of record.

For example, Nagamoto discloses a platen roller 12 for holding and transporting the thermosensitive adhesive label 2, printer 8 having a thermal head 11 for printing on the label 2, and pressure-application means (not shown) for pressing the thermal head 11 into pressure contact with the platen roller 12 with the label 2 disposed therebetween. However, the platen roller 12 in Nagamoto does not function as a heat-application member for applying heat to the label 2. The heat activator 10 in Nagamoto, which corresponds to a heat-application member, is not configured to be brought into pressure contact with the thermal head 11. Thus, Nagamoto does not disclose or suggest pressure-application means for bringing the printing means into pressure contact with the heat-application and transporting member with the

thermosensitive adhesive sheet disposed therebetween, as recited in new claim 10.

Claims 11-16 depend on and contain all of the limitations of independent claim 10 and, therefore, distinguish from the prior art of record at least in the same manner as claim 10.

Moreover, there are separate grounds for patentability of new dependent claims 11-13, which are directed to the specific structure of the heat-application and transporting member and its structural and functional relation to the printing means, and new claim 16, which is directed to the specific structure of the pressure application means and its positional and structural relation to the printing means and the heat-application and transporting member. No corresponding structural features are disclosed or suggested by the prior art of record.

New independent claim 17 is directed to the combination of a thermosensitive adhesive sheet having a printable surface and a thermosensitive adhesive surface disposed opposite to the printable surface, and a printing apparatus having printing means for printing on the printable surface of the thermosensitive adhesive sheet during a printing operation and a heat-application and transporting member disposed generally opposite to and confronting the printing means with the thermosensitive adhesive sheet

disposed therebetween for heating the thermosensitive adhesive layer of the thermosensitive adhesive sheet and for transporting the thermosensitive adhesive sheet during a printing operation. No corresponding combination is disclosed or suggested by the prior art of record." For example, in Nagamoto the heat-application and transporting member 10 is not disposed generally opposite to and confronting the printing means 8, as required by independent claim 17.

Claims 18-20 depend on and contain all of the limitations of independent claim 17 and, therefore, distinguish from the prior art of record at least in the same manner as claim 17.

In view of the foregoing amendments and discussion,
the application is believed to be in allowable form.
Accordingly, favorable reconsideration and allowance of the
claims are most respectfully requested.

Respectfully submitted,

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